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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/589,621	06/07/2000	Sara Ruhina Biyabani	004860.P2438	8620

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06/21/2005

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EXAMINER

CASCHERA, ANTONIO A

ART UNIT

PAPER NUMBER

2676

DATE MAILED: 06/21/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/589,621

Applicant(s)

BIYABANI, SARA RUHINA

Examiner

Antonio A. Caschera

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 March 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2-9, 11-14, 16-21 and 23-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2-9, 11-14, 16-21 and 23-26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 June 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. Receipt is acknowledged of a request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e) and a submission, filed on 3/24/05.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 2-9, 11-14, 16-21 and 23-26 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

In reference to claims 2, 11, 16 and 23, the specification does not adequately describe, in such a way as to enable one skilled in the art, the claim limitations of the frame-preparation memory being mapped into a physical device for the main memory and the address space for the refresh memory being mapped to a physical memory device for a dedicated memory that is separate from the physical memory device for the main memory (see last 4 lines of claim 2, for example). It is not clear, in view of the specification or drawings, how Applicant's invention utilizes a unified memory architecture while consisting of separate physical memories. The specification solely states, "In the present invention, the memory controller 201 logically

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partitions the address space of the color buffer 204 into a frame-preparation memory 205 and a refresh memory 207. The address space of the frame-preparation memory 205 is mapped to the main memory 203, while the address space of the refresh memory 207 is mapped to a separate, dedicated memory,” (see page 11, lines 5-11 of the specification). Further, the drawings do not show any indication that there are separate physical memory devices utilized with a unified memory architecture in the invention. The Examiner poses the questions, “How does the unified memory system of the invention comprise a separate physical memory device and how is the refresh memory “mapped” to this device?”

Further, the disclosure is not enabling because in, for example, claim 2 an embodiment is claimed that utilizes two logical buffers, one in main memory and one in a separate physical memory. Nowhere in the drawings is such a feature shown. The most tangible drawing (Figure 2), discloses two logical buffers (frame-prep and refresh memories, 205 and 207) however they are both included in the color buffer (204) which is explicitly disclosed as being apart of video memory which is further comprised within main memory (see page 10, lines 17-21 through page 11, lines 1-11).

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 2-9, 11-14, 16-21 and 23-26 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In reference to claims 2-9, 11-14, 16-21 and 23-26, the Office believes the recited claim limitations of claims 2, 11, 16 and 23 to be unclear. In particular, it is unclear when considering the claim language of these claims (2, 11, 16 and 23) which recite that a color buffer, in main memory, is partitioned into two logical buffers, operable for designating one logical buffer as a frame-preparation memory and one logical buffer as a refresh memory (see lines 5-7 of claim 2, for example). Such a limitation contradicts the above claimed element of having the address space of the refresh memory mapped to a separate physical memory device. The Office finds it unclear as to how the unified memory architecture of Applicant's claims comprises a separate physical memory device and how this memory device comprises the refresh memory when it is explicitly stated, in the claims (see lines 5-7 of claim 2, for example) that the refresh memory is within main memory.

Further, the Office is confused as to the terms, "mapping" versus "copying" of claims 2, 11, 16 and 23. The conventional action of "mapping" in computer memory art applications can be thought of as using virtual memories or pointers. These direct the CPU, memory controller etc. to a certain area of a certain memory device to access the particular data. The action of "copying" in computer memory art applications is seen as physically copying data from one location to another. The Office believes that the Applicant uses these terms interchangeably without specifically stating that these terms are equivalent. The idea of "mapping" address spaces to another memory device is not seen equivalent as "copying" data to the other memory device. As seen in claim 2, addresses are mapped to another device while in claim 16, data is copied to that other physical device. The Office asks, "Does the Applicant really mean "copying" the data to another physical device, separate to main memory in order to decouple the

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refresh memory, in claim 2?” The Office poses this question since the Applicant speaks of limiting bandwidth to certain memory devices involved with video/graphics processing thereby reducing traffic to these devices. The conventional “mapping” to decouple the refresh memory, creating a separate physical memory device, would not improve such bandwidth problems as the memory controller would still be directed to access the data at the place where the data is stored which, is explicitly disclosed as in within the main memory.

No further prior art search maybe preformed at this time due to the lack of clarity of the claim limitations in view of the specification and which does not enable the Examiner to fully understand the invention.

Response to Arguments

4. Applicant’s arguments, see pages 9-11, filed 03/24/05, with respect to claims 2, 11, 16 and 23 have been fully considered and are persuasive. The prior art rejection of these claims has been withdrawn since the Rao or Akeley references do not explicitly disclose each and every limitation of the claims.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Antonio Caschera whose telephone number is (571) 272-7781. The examiner can normally be reached Monday-Thursday and alternate Fridays between 7:30 AM and 5:00 PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Bella, can be reached at (571) 272-7778.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

(703) 872-9314 (for Technology Center 2600 only)

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

aac

6/14/05



MATTHEW C. BELLA
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600